



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,541	03/10/2004	Yo-Shen Lin	CMDP0009USA	2540
27765	7590	04/18/2005	EXAMINER	
NORTH AMERICA INTERNATIONAL PATENT OFFICE (NAIPC)			HAM, SEUNGSOOK	
P.O. BOX 506			ART UNIT	
MERRIFIELD, VA 22116			PAPER NUMBER	
			2817	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

sm

Office Action Summary	Application No. 10/708,541	Applicant(s) LIN ET AL.	
	Examiner Seungsook Ham	Art Unit 2817	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 9-15 is/are rejected.
- 7) ☒ Claim(s) 2 and 4-8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, lines 2-4, "wherein the sixth layer is next to *the ground layer* so that a fourth capacitor is formed between the sixth layer and the ground layer" is confusing since claim 2 already recites that the first layer is next to the ground layer to formed a third capacitor (see claim 2, lines 18-20). It is unclear as to how the same ground layer can be positioned next to both sixth and first layers. It appears that there are two ground layers (see fig. 8) rather than a single ground layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 9-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant's Admitted Prior Art in view of Phillips, Jr. (US '400) or Kaneko et al. (US '517).

The Applicant's Admitted Prior Art (fig. 2) discloses the same lumped-element low-pass filter except the first and second inductors are oriented in opposite direction to provide a negative mutual inductance.

Kaneko et al. (figs. 1-5) discloses a laminated low pass filter having first and second spiral inductors 7, 15 are oriented in an opposite direction to provide a negative mutual inductance (see fig. 5, and col. 2, lines 54-60). Kaneko et al. also shows a capacitor formed by a plurality of layers (fig. 2).

Phillips, Jr. (figs. 1 and 2) also discloses a laminated low pass filter having first and second spiral inductors 12, 14 are oriented in an opposite direction to provide a negative mutual inductance (see abstract). Phillips, Jr. also shows a capacitor formed by a plurality of layers 28, 38.

It would have been obvious to one of ordinary skill in the art to provide the first and second spiral inductors oriented in an opposite direction to provide a negative mutual inductance in the device of the Applicant's Admitted Prior Art to improve the noise eliminating effect as taught by Kaneko et al. (col. 2, lines 54-60) or to enhance the flux linkage between the windings of the coils/inductors as taught by Phillips, Jr. (col. 2, lines 50-56).

Regarding claims 9, 11, 14 and 15, it would have been obvious to design capacitors and inductors in a plurality of layers of a multi-layered substrate since such design techniques are well known in the art as shown by Kaneko et al. or Phillips, Jr, and also it requires only a routine skill in the art.

Regarding claim 10, using a low temperature co-fired ceramic (LTCC) material as the multi-layered substrate is considered as an obvious design modification since it is well known in the art to use LTCC substrate to reduce the size of high frequency devices.

The subject matter of claims 12 and 13 are inherent from the modified device of the Applicant's Admitted Prior Art. Alternately, it is well known in the art to change the shape and the distance between the inductors to obtain a desired mutual inductance.

Allowable Subject Matter

Claims 2 and 4-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 3 is would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kim et al. (US '101) and Kitahara (US '8450 discloses a low pass filter having first and second inductors are oriented in an opposite direction for a negative mutual inductance;

Lo (US '925) discloses a multi-layered substrate filter using a LTCC substrate to reduce the size of the filter (col. 1, lines 27-34); and

Sakamoto et al. (US 656) discloses a multi-layered filter having first and second inductors providing a mutual inductance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seungsook Ham whose telephone number is (571) 272-2405. The examiner can normally be reached on Monday-Thursday, 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571)-272-1769. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Seungsook Ham
Primary Examiner
Art Unit 2817

sh